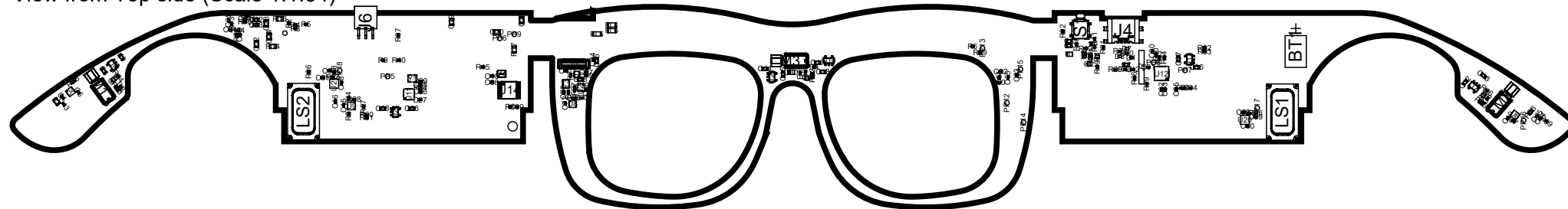
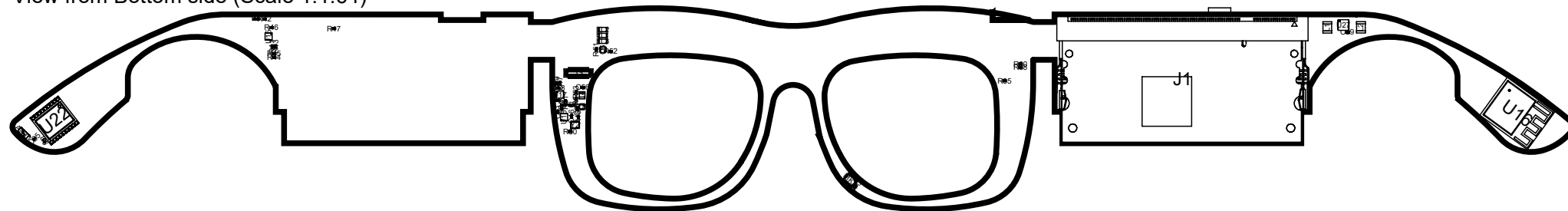


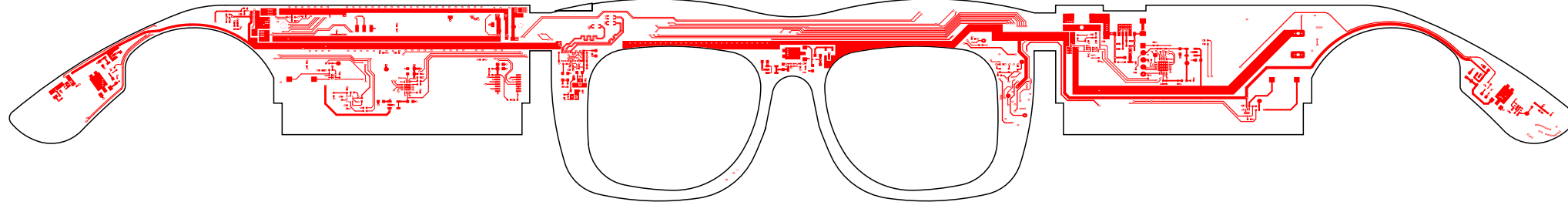
View from Top side (Scale 1:1.64)



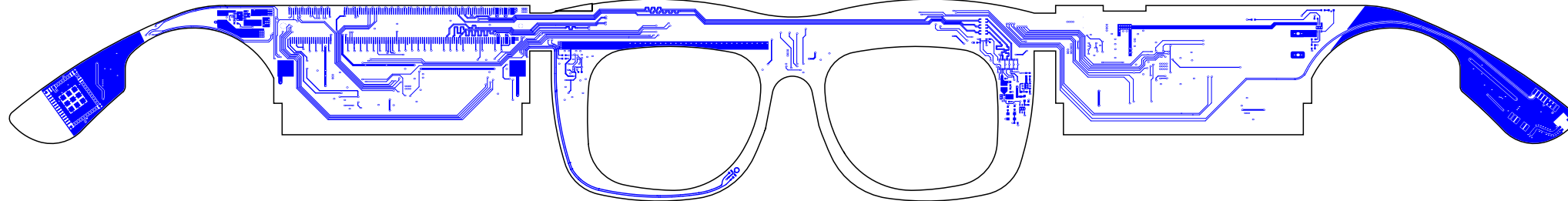
View from Bottom side (Scale 1:1.64)



Top Layer (Scale 1:1.64)



Bottom Layer (Scale 1:1.64)



| Symbol    | Count | Hole Size | Plated     | Hole Tolerance |
|-----------|-------|-----------|------------|----------------|
| ○         | 640   | 0.20mm    | Plated     |                |
| □         | 1     | 0.50mm    | Non-Plated |                |
| ▣         | 2     | 0.76mm    | Plated     |                |
| ◇         | 2     | 0.90mm    | Non-Plated |                |
| ▽         | 1     | 1.12mm    | Plated     |                |
| ☆         | 1     | 1.60mm    | Plated     |                |
| ✧         | 2     | 3.00mm    | Plated     |                |
| 649 Total |       |           |            |                |



| Transmission Line              | Target Impedance | Trace layer  | Wide Trace Width | Narrow Trace Width | Gap    | Reference layers | Clearance | Target Tolerance |
|--------------------------------|------------------|--------------|------------------|--------------------|--------|------------------|-----------|------------------|
| Edge-Coupled Coated Microstrip | 100              | Top Layer    | 0.09mm           | 0.09mm             | 0.17mm | Int1 (GND)       | 0.13mm    | 10%              |
| Edge-Coupled Coated Microstrip | 100              | Bottom Layer | 0.09mm           | 0.09mm             | 0.17mm | Int2 (GND)       | 0.13mm    | 10%              |

|                                                                                     | Material         | Layer                             | Thickness | Dielectric Material | Type           | Gerber |
|-------------------------------------------------------------------------------------|------------------|-----------------------------------|-----------|---------------------|----------------|--------|
|  | Surface Material | Board Layer Stack Top Coverlay    | 0.01mm    | FC-001              | Solder Mask    | GCT1   |
|                                                                                     | CF-004           | Top Layer                         | 0.04mm    |                     | Signal         | GTL    |
|                                                                                     | Prepreg          |                                   | 0.03mm    | PP-017              | Dielectric     |        |
|                                                                                     | CF-004           | Int1 (GND)                        | 0.02mm    |                     | Internal Plane | GP1    |
|                                                                                     | Core             |                                   | 0.13mm    | Core-039            | Dielectric     |        |
|                                                                                     | CF-004           | Int2 (GND)                        | 0.02mm    |                     | Internal Plane | GP2    |
|                                                                                     | Prepreg          |                                   | 0.03mm    | PP-017              | Dielectric     |        |
|                                                                                     | CF-004           | Bottom Layer                      | 0.04mm    |                     | Signal         | GBL    |
|                                                                                     | Surface Material | Board Layer Stack Bottom Coverlay | 0.01mm    | FC-001              | Solder Mask    | GCB1   |
| Total thickness: 0.30mm                                                             |                  |                                   |           |                     |                |        |

|    |                   |                                                                                                                     |                                   |  |   |                      |                |  |   |          |   |  |   |  |  |  |   |  |  |  |
|----|-------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------|--|---|----------------------|----------------|--|---|----------|---|--|---|--|--|--|---|--|--|--|
| 1  | A                 |                                                                                                                     |                                   |  | B |                      |                |  | C |          |   |  | D |  |  |  | E |  |  |  |
|    | Bill Of Materials |                                                                                                                     |                                   |  |   |                      |                |  |   |          |   |  |   |  |  |  |   |  |  |  |
|    | Line #            | Designator                                                                                                          |                                   |  |   | Comment              |                |  |   | Quantity |   |  |   |  |  |  |   |  |  |  |
|    | 1                 | ANT1                                                                                                                |                                   |  |   | W3011                |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 2  | 2                 | BT1                                                                                                                 |                                   |  |   | Battery Soldered     |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
|    | 3                 | C1, C6, C7, C10, C26, C27, C46, C47, C48, C49, C50, C51, C52, C53, C55, C59, C60, C62, C63, C71, C72, C73, C79, C86 |                                   |  |   | 1uF/6V3              |                |  |   | 24       |   |  |   |  |  |  |   |  |  |  |
|    | 4                 | C2, C4, C5, C8, C12, C17, C75, C78                                                                                  |                                   |  |   | 22uF/6V3             |                |  |   | 8        |   |  |   |  |  |  |   |  |  |  |
|    | 5                 | C3, C19, C20, C21, C22, C23, C24                                                                                    |                                   |  |   | 47uF/6V3             |                |  |   | 7        |   |  |   |  |  |  |   |  |  |  |
|    | 6                 | C9, C13, C18, C36, C37, C44, C45, C66, C68                                                                          |                                   |  |   | 1uF/6V3              |                |  |   | 9        |   |  |   |  |  |  |   |  |  |  |
|    | 7                 | C11, C15, C16, C28, C30, C32, C34, C35, C38, C39, C40, C43, C54, C65, C69, C70, C74, C76, C77, C81                  |                                   |  |   | 100nF                |                |  |   | 20       |   |  |   |  |  |  |   |  |  |  |
|    | 8                 | C14, C57, C58, C61, C64                                                                                             |                                   |  |   | 4.7uF/6V3            |                |  |   | 5        |   |  |   |  |  |  |   |  |  |  |
|    | 9                 | C25                                                                                                                 |                                   |  |   | 2.2pF                |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
|    | 10                | C29, C31, C84                                                                                                       |                                   |  |   | 100pF                |                |  |   | 3        |   |  |   |  |  |  |   |  |  |  |
|    | 11                | C33, C80, C85                                                                                                       |                                   |  |   | 10uF/6V3             |                |  |   | 3        |   |  |   |  |  |  |   |  |  |  |
|    | 12                | C41, C42                                                                                                            |                                   |  |   | 1uF/6V3              |                |  |   | 2        |   |  |   |  |  |  |   |  |  |  |
|    | 13                | C56                                                                                                                 |                                   |  |   | 22uF/6V3             |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
|    | 14                | C82, C83                                                                                                            |                                   |  |   | 10uF                 |                |  |   | 2        |   |  |   |  |  |  |   |  |  |  |
|    | 15                | D1, D2, D3, D4                                                                                                      |                                   |  |   | ESD9B5.0ST5G         |                |  |   | 4        |   |  |   |  |  |  |   |  |  |  |
|    | 16                | D5                                                                                                                  |                                   |  |   | 155060VS73200        |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
|    | 17                | D6                                                                                                                  |                                   |  |   | PESD5V0S1UL,315      |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
|    | 18                | D7, D8                                                                                                              |                                   |  |   | TPD1E05U06DPYT       |                |  |   | 2        |   |  |   |  |  |  |   |  |  |  |
|    | 3                 | 19                                                                                                                  | FB1, FB2, FB4, FB5, FB6, FB7, FB8 |  |   |                      | BLM18SG121TN1D |  |   |          | 7 |  |   |  |  |  |   |  |  |  |
|    |                   | 20                                                                                                                  | FB3                               |  |   |                      | BLM18AG601SN1D |  |   |          | 1 |  |   |  |  |  |   |  |  |  |
| 21 |                   | FL1, FL2, FL3, FL4, FL5, FL6                                                                                        |                                   |  |   | CMA0805A900R-1A      |                |  |   | 6        |   |  |   |  |  |  |   |  |  |  |
| 22 |                   | J1                                                                                                                  |                                   |  |   | CM3P_CM4S            |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 23 |                   | J3                                                                                                                  |                                   |  |   | DF37NC-30DS-0.4V(51) |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 24 |                   | J4                                                                                                                  |                                   |  |   | USB4135-GF-A         |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 25 |                   | J5                                                                                                                  |                                   |  |   | 505550-3420          |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 26 |                   | J6                                                                                                                  |                                   |  |   | M22-6540342R         |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 27 |                   | L1, L2                                                                                                              |                                   |  |   | DFE322520F-2R2M=P2   |                |  |   | 2        |   |  |   |  |  |  |   |  |  |  |
| 28 |                   | L4                                                                                                                  |                                   |  |   | DFE201612P-1R0M=P2   |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 29 |                   | LS1, LS2                                                                                                            |                                   |  |   | CMS-16093-078SP-67   |                |  |   | 2        |   |  |   |  |  |  |   |  |  |  |
| 30 |                   | M1, M2, M3                                                                                                          |                                   |  |   | HD-EMB1104-SM-2      |                |  |   | 3        |   |  |   |  |  |  |   |  |  |  |
| 31 |                   | MK2                                                                                                                 |                                   |  |   | MP23ABS1TR           |                |  |   | 1        |   |  |   |  |  |  |   |  |  |  |
| 32 |                   | Q1, Q2, Q3, Q4, Q5                                                                                                  |                                   |  |   | NTK3134NT5G          |                |  |   | 5        |   |  |   |  |  |  |   |  |  |  |
| 33 |                   | Q6, Q7                                                                                                              |                                   |  |   | DMG1024UV-7          |                |  |   | 2        |   |  |   |  |  |  |   |  |  |  |
| 34 |                   | R1, R36, R66, R79                                                                                                   |                                   |  |   | 10K                  |                |  |   | 4        |   |  |   |  |  |  |   |  |  |  |
| 35 |                   | R2, R3, R4, R5, R7, R21, R22, R34, R35, R50, R51, R52, R64, R65                                                     |                                   |  |   | 2K2                  |                |  |   | 14       |   |  |   |  |  |  |   |  |  |  |

|    |                   |                                                 |  |  |                          |                    |  |  |   |          |  |  |   |  |  |  |   |  |  |  |
|----|-------------------|-------------------------------------------------|--|--|--------------------------|--------------------|--|--|---|----------|--|--|---|--|--|--|---|--|--|--|
| 1  | A                 |                                                 |  |  | B                        |                    |  |  | C |          |  |  | D |  |  |  | E |  |  |  |
|    | Bill Of Materials |                                                 |  |  |                          |                    |  |  |   |          |  |  |   |  |  |  |   |  |  |  |
|    | Line #            | Designator                                      |  |  |                          | Comment            |  |  |   | Quantity |  |  |   |  |  |  |   |  |  |  |
|    | 36                | R6, R27, R29, R30, R31, R38, R60, R61, R62, R63 |  |  |                          | 0R                 |  |  |   | 10       |  |  |   |  |  |  |   |  |  |  |
| 2  | 37                | R8, R12, R20                                    |  |  |                          | 47K                |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 38                | R9, R10, R73                                    |  |  |                          | 100K               |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 39                | R11, R16                                        |  |  |                          | 1K5                |  |  |   | 2        |  |  |   |  |  |  |   |  |  |  |
|    | 40                | R13, R14, R17                                   |  |  |                          | 0R                 |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 41                | R15, R18, R19, R24, R26, R33, R37               |  |  |                          | 1K0                |  |  |   | 7        |  |  |   |  |  |  |   |  |  |  |
|    | 42                | R23, R25, R32                                   |  |  |                          | 330                |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 43                | R28                                             |  |  |                          | 4K7                |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 44                | R39                                             |  |  |                          | 330                |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 45                | R40, R49, R59                                   |  |  |                          | 10K                |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 46                | R41, R44, R45                                   |  |  |                          | 27K                |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 47                | R42, R43, R46                                   |  |  |                          | 680R               |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 48                | R47                                             |  |  |                          | 10K                |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 49                | R48                                             |  |  |                          | 33                 |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 50                | R53                                             |  |  |                          | 12K1               |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 51                | R54                                             |  |  |                          | 14K5               |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 52                | R55, R56, R57, R58                              |  |  |                          | 22K                |  |  |   | 4        |  |  |   |  |  |  |   |  |  |  |
|    | 53                | R70, R71                                        |  |  |                          | 5K1                |  |  |   | 2        |  |  |   |  |  |  |   |  |  |  |
|    | 54                | R72                                             |  |  |                          | 680K               |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 55                | R74, R76                                        |  |  |                          | 150K               |  |  |   | 2        |  |  |   |  |  |  |   |  |  |  |
| 3  | 56                | R75                                             |  |  |                          | 300K               |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 57                | S1                                              |  |  |                          | TL3901AGQF180      |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 58                | U1                                              |  |  |                          | SIP32411DNP-T1-GE4 |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 59                | U2                                              |  |  |                          | 74LVC1G08GM-Q100X  |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 60                | U3                                              |  |  |                          | 74LVC1G32GM-Q100H  |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 61                | U4, U6, U25                                     |  |  |                          | TLV75533PDRVR      |  |  |   | 3        |  |  |   |  |  |  |   |  |  |  |
|    | 62                | U5, U7, U10, U13, U24, U26                      |  |  |                          | TLV74333PDBVR      |  |  |   | 6        |  |  |   |  |  |  |   |  |  |  |
|    | 63                | U8, U17                                         |  |  |                          | TLV75518PDRVR      |  |  |   | 2        |  |  |   |  |  |  |   |  |  |  |
|    | 64                | U9                                              |  |  |                          | MC6470             |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 65                | U11                                             |  |  |                          | SGTL5000XNLA3      |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 66                | U12                                             |  |  |                          | PIC16LF1829-I_ML   |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 67                | U14                                             |  |  |                          | SC16IS741AIPWJ     |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 68                | U15                                             |  |  |                          | BQ25170DSGR        |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 69                | U16                                             |  |  |                          | ESP8684-MINI-1-H2  |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 70                | U18                                             |  |  |                          | TLV75528PDRVR      |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 71                | U19                                             |  |  |                          | TPS62A02DRLR       |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 72                | U20, U21                                        |  |  |                          | LM4819LD_NOPB      |  |  |   | 2        |  |  |   |  |  |  |   |  |  |  |
|    | 73                | U22                                             |  |  |                          | MAX-M10M-00B       |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
|    | 74                | U27                                             |  |  |                          | PAM2319AYAA        |  |  |   | 1        |  |  |   |  |  |  |   |  |  |  |
| 75 | U30               |                                                 |  |  | VCNL36825T               |                    |  |  | 1 |          |  |  |   |  |  |  |   |  |  |  |
| 76 | Y1                |                                                 |  |  | ECS-2520MVL3-122.8-CN-TR |                    |  |  | 1 |          |  |  |   |  |  |  |   |  |  |  |
| 77 | Y2, Y3            |                                                 |  |  | ECS-2520MV-240-BL-TR     |                    |  |  | 2 |          |  |  |   |  |  |  |   |  |  |  |
| 78 | Y4                |                                                 |  |  | ASDDV-1.8432MHZ-LC-T3    |                    |  |  | 1 |          |  |  |   |  |  |  |   |  |  |  |
|    |                   |                                                 |  |  |                          |                    |  |  |   |          |  |  |   |  |  |  |   |  |  |  |
|    |                   |                                                 |  |  |                          |                    |  |  |   |          |  |  |   |  |  |  |   |  |  |  |

A

B

C

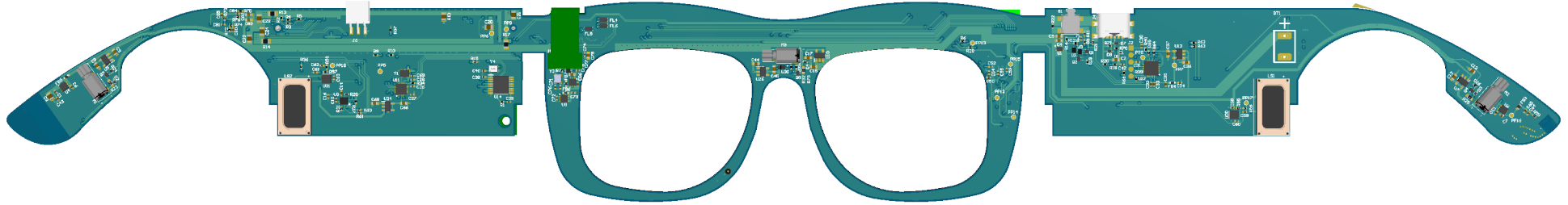
D

E

1

1

Realistic View



2

2

Realistic View



3

3

4

4

A

B

C

D

E

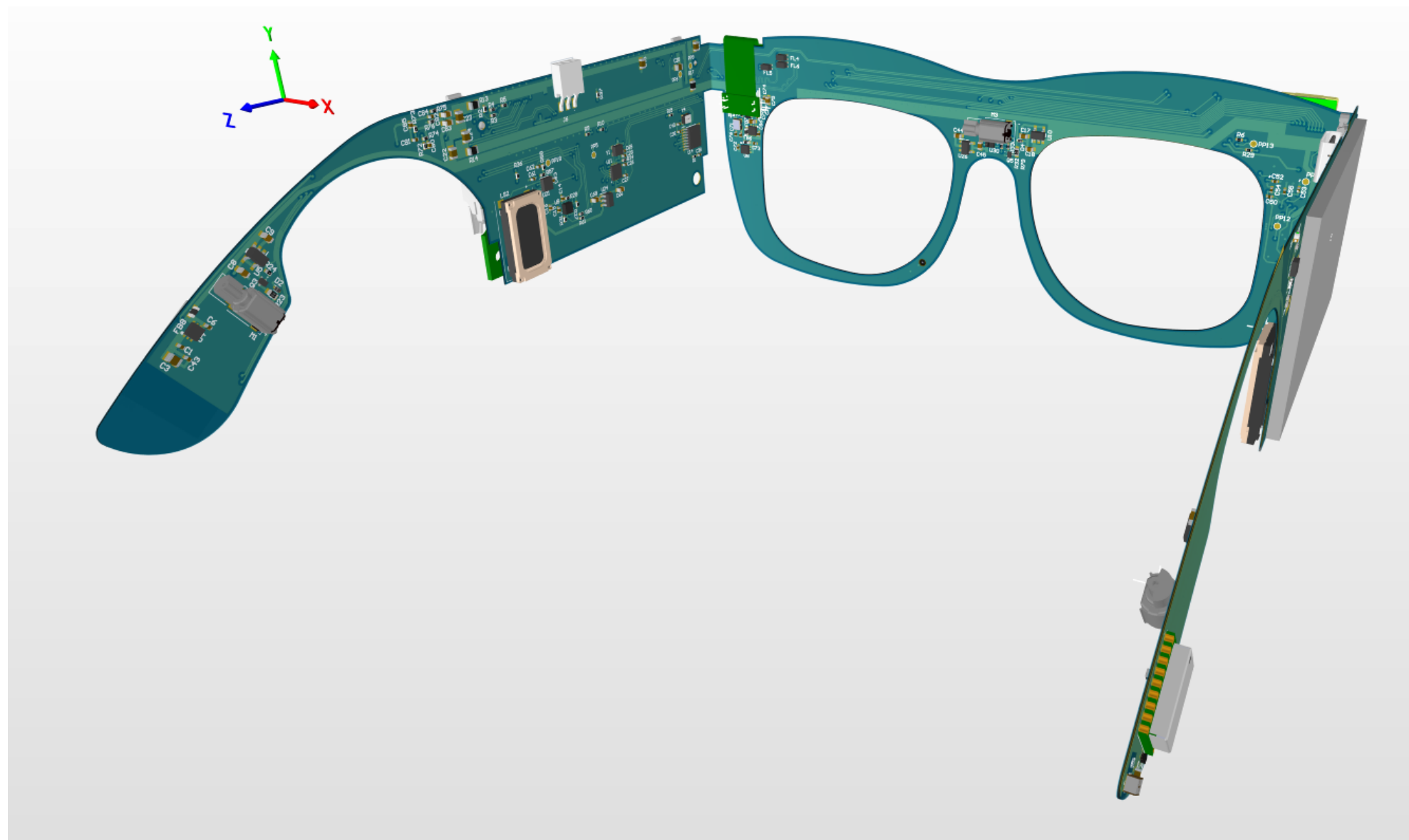
A

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C

D

E



A

B

C

D

E

A

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C

D

E

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4

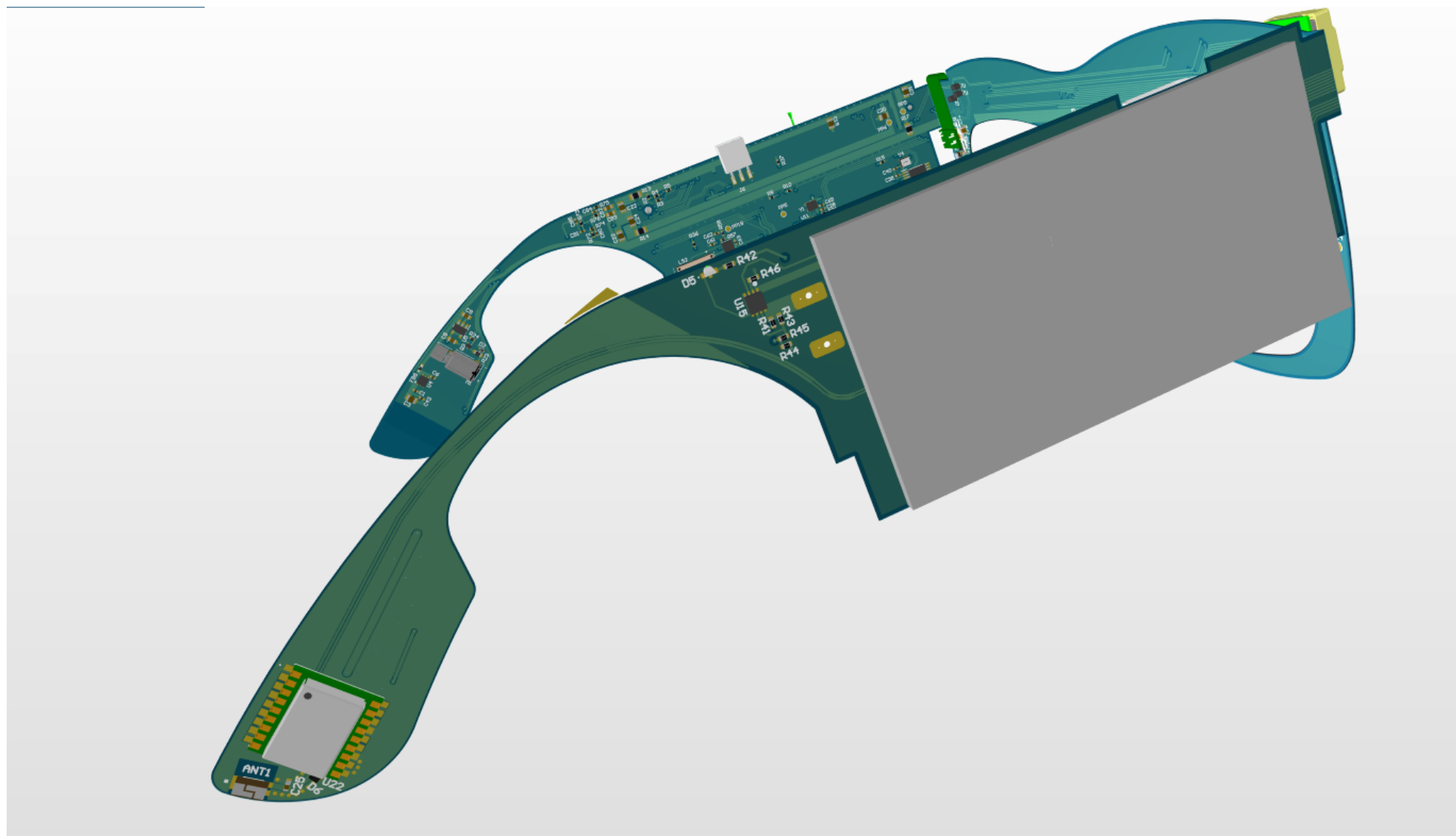
A

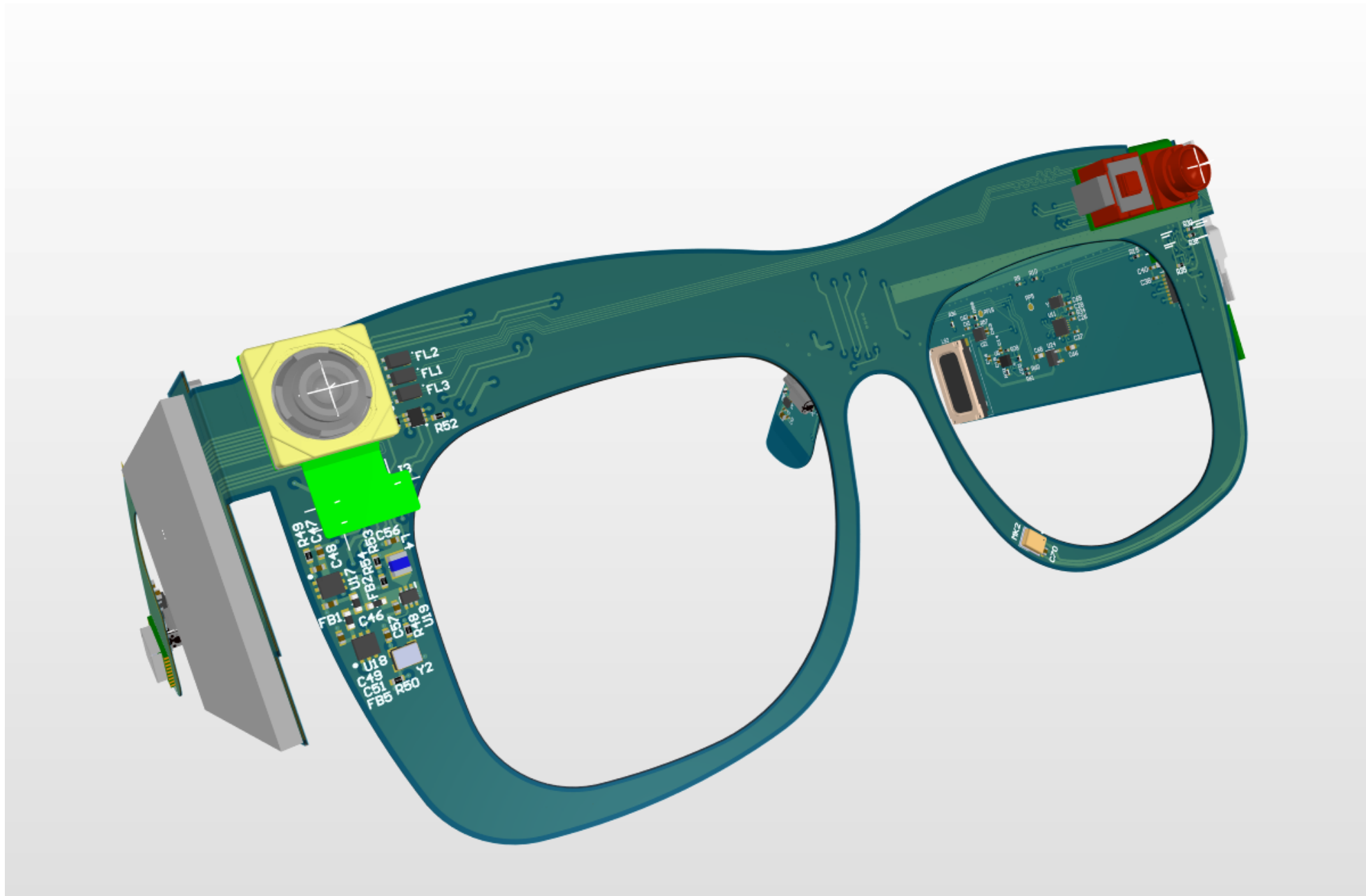
B

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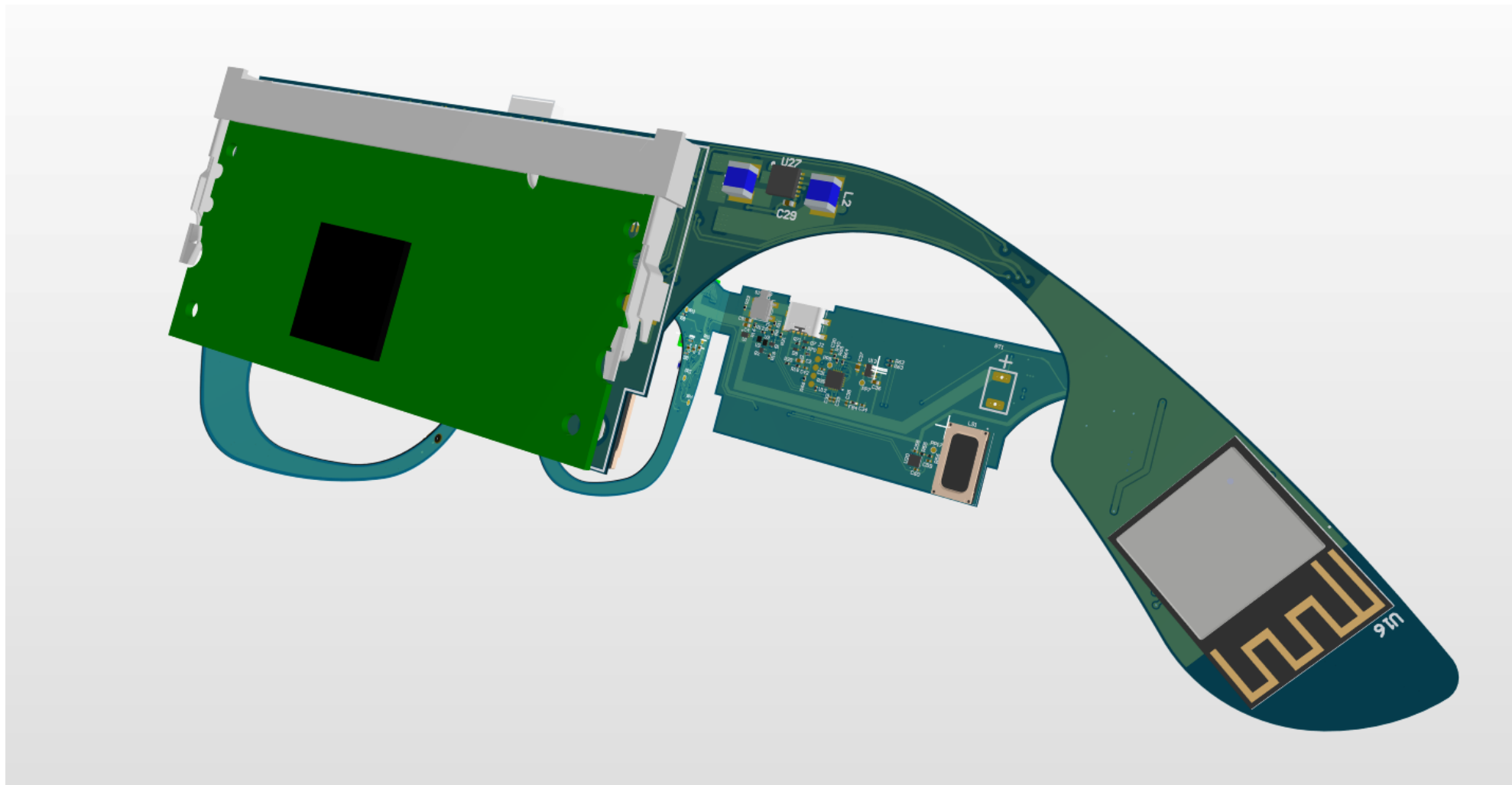
A

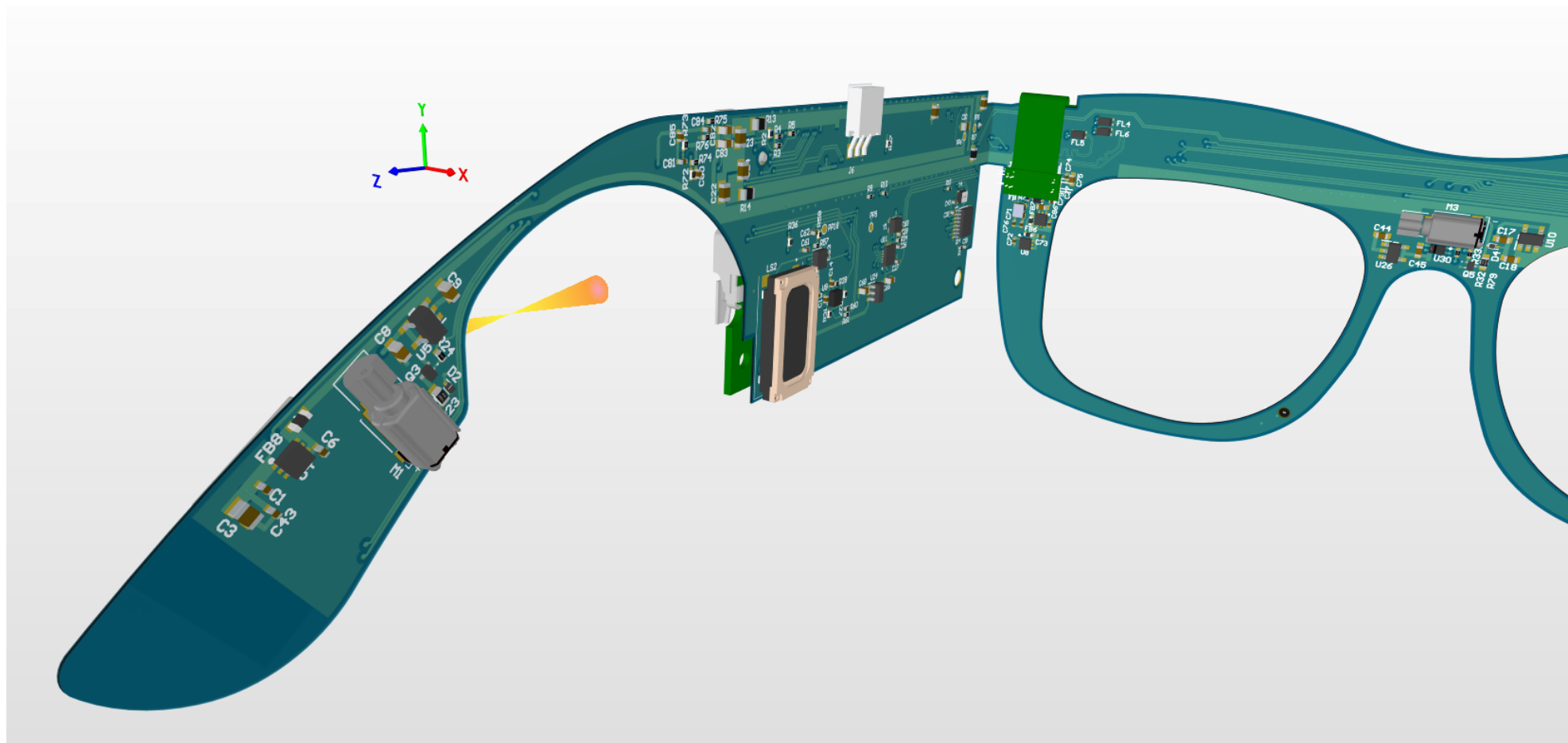
B

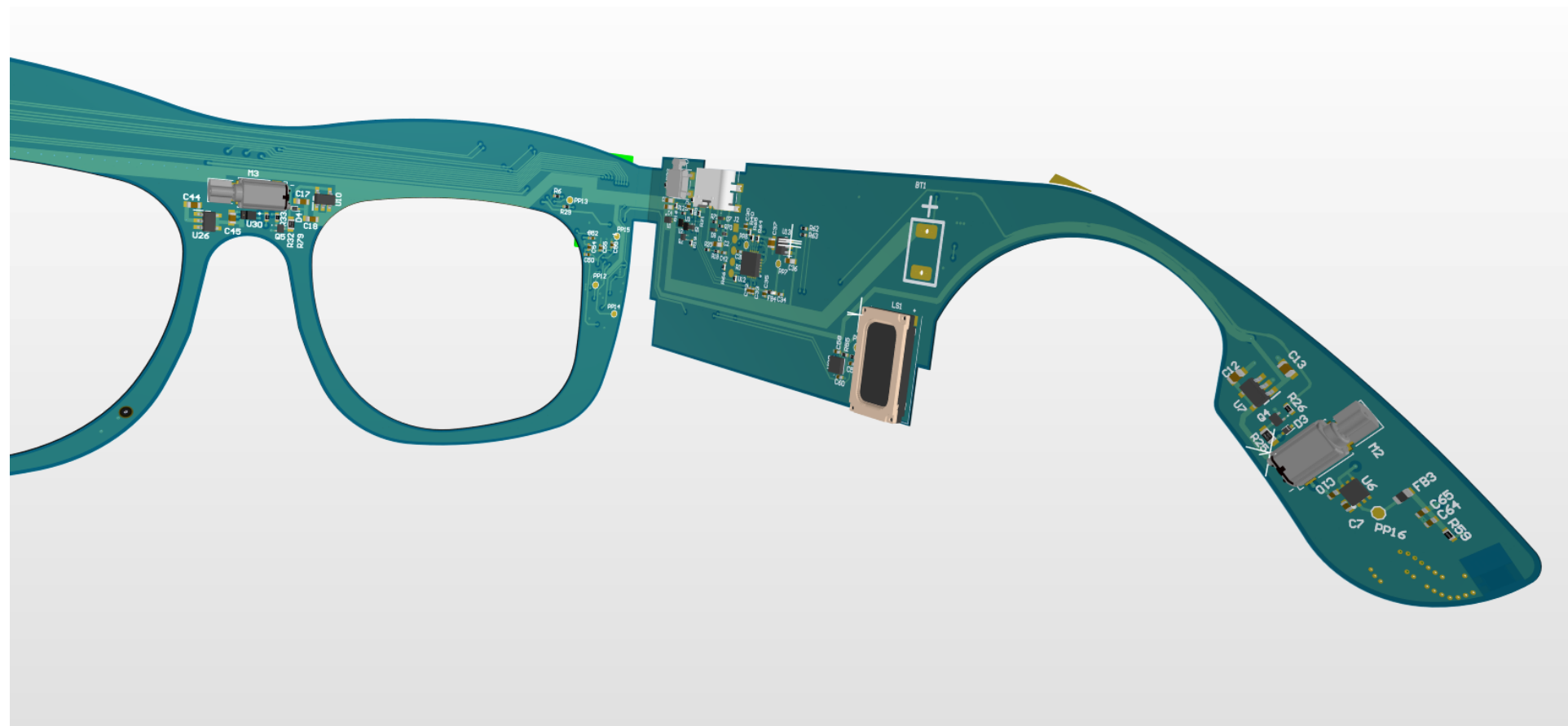
C

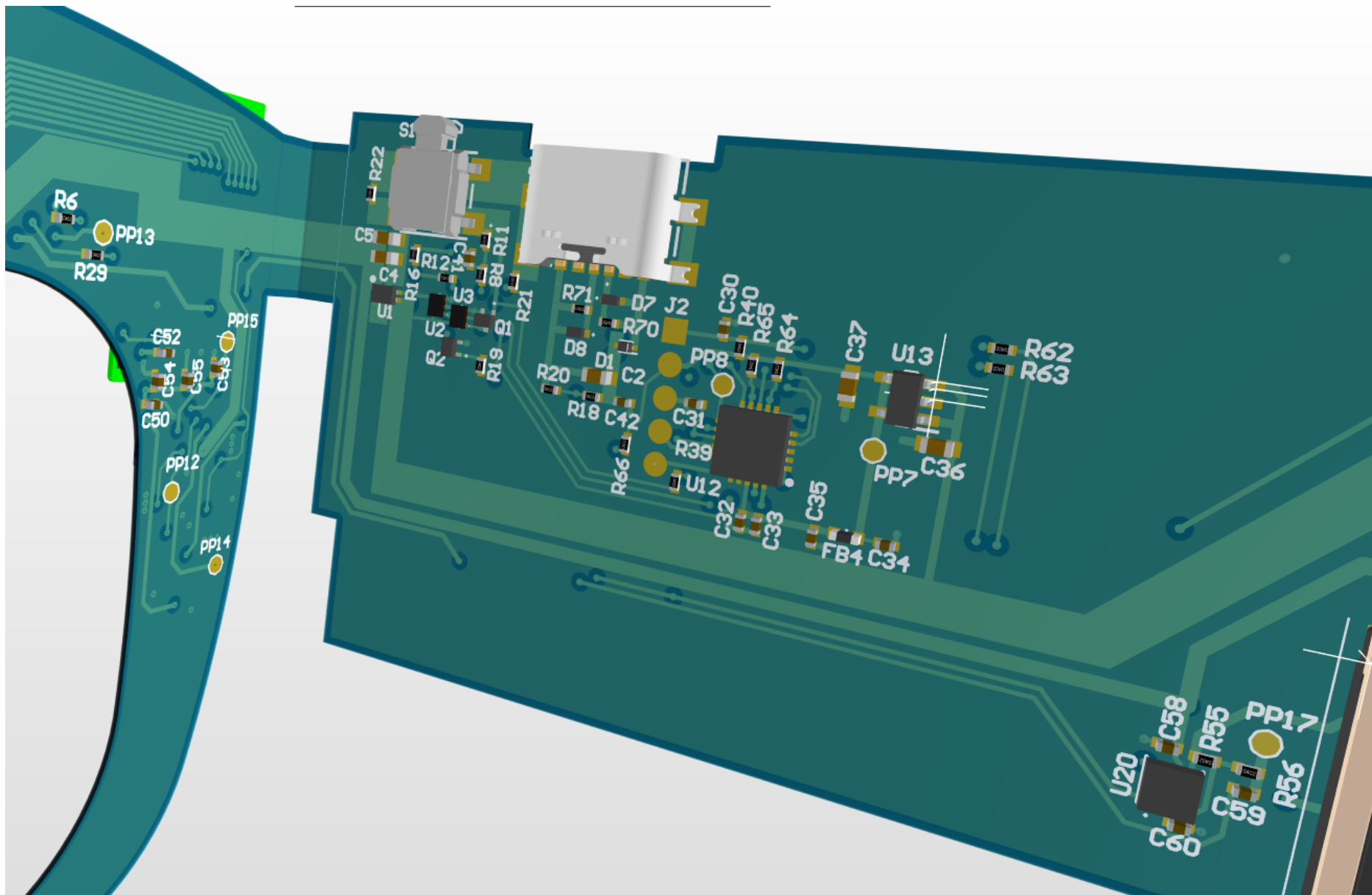
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